

GCTATAAGGA TCACGGCGCC CAGTCGACG TGAGCTCCTC TGCTACTCAG AGTTGCAACC TCAGGCTCGCT
 ATG GCT CCC AGC AGC CCC CGG CCC GCG CTG CCC GCA CTC CTG GTC CTG GGG GCT CTG TTC CCA
 MET ALA PRO SER SER PRO ARG PRO ALA LEU PRO ALA LEU LEU VAL LEU LEU GLY ALA LEU PHE PRO
 GGA CCT GGC AAT GCC CAG ACA TCT GTG TCC CCC TCA AAA GTC ATC CTG CCC CGG GGA GGC TCC GTG
 GLY PRO GLY ASN ALA GLN THR SER VAL SER PRO SER LYS VAL ILE LEU PRO ARG GLY GLY SER VAL
 CTG GTG ACA TGC AGC ACC TCC TGT TGC GAC CAG CCC AAG TTG GGC ATA GAG ACC CCG TTG CCT AAA
 LEU VAL THR CYS SER THR SER CYS ASP GLN PRO LYS LEU LEU GLY ILE LEU THR PRO LYS
 AAG GAG TTG CTC CTG CCT GGG AAC AAC CCG AAG GTG TAT GAA CTG AGC AAT GTG CAA GAA GAT AGC
 LYS GLU LEU LEU LEU PRO GLY ASN ASN ARG LYS VAL TYR GLU LEU SER ASN VAL GLN GLU ASP SER
 CAA CCA ATG TGC TAT TCA AAC TGC CCT GAT GGG CAG TCA ACA GCT AAA ACC TTC CTC ACC GTG TAC
 GLN PRO MET CYS TYR SER ASN CYS PRO ASP GLY GLN SER THR ALA LYS THR PHE LEU THR VAL TYR
 TGG ACT CCA GAA CCG GTG GAA CTG GCA CCC CTG CCC TCT TGG CAG CCA CTG GGC AAG AAC CTT ACC
 TRP THR PRO PRO GLU ARG ARG VAL GLU LEU ALA PRO LEU PRO SER TRP GLN PRO VAL GLY LYS ASN LEU THR
 CTA CGC TGC CAG GTG GAG GGT GGG GCA CCC CGG GCC AAC CTC ACC GTG CTG CTC CGT GGG GAG
 LEU ARG CYS GLN VAL GLU GLY GLY ALA PRO ARG ALA ASN LEU THR VAL VAL LEU ARG GLY GLU
 AAG GAG CTG AAA CCG GAG CCA GCT GTG GGG GAG CCC GCT GAG GTC ACC ACC GTG CTG GTG AGG
 LYS GLU LEU LYS ARG GLU PRO ALA VAL GLY GLU PRO ALA GLU VAL THR THR VAL LEU VAL ARG
 AGA GAT CAC CAT GGA GCC AAT TTC TGC TGC CGC ACT GAA CTG GAC CTG CGG CCC CAA GGG CTG GAG
 ARG ASP HIS HIS GLY ALA ASN PHE SER CYS ARG THR GLU LEU ASP LEU ARG PRO GLN GLY LEU GLU

FIG. 1A

CTG	TTT	GAG	AAC	ACC	TCG	GCC	CCC	TAC	CAG	CTC	CAG	ACC	TTT	GTC	CTG	CCA	GCG	ACT	CCC	CCA	CAA
LEU	PHE	GLU	ASN	THR	SER	ALA	PRO	TYR	GLN	LEU	GLN	THR	PHE	VAL	LEU	PRO	ALA	THR	PRO	PRO	GLN
CTT	GTC	AGC	CCC	GCG	GTC	CTA	GAG	GTG	GAC	ACG	CAG	GGG	ACC	GTG	GTC	TGT	TCC	CTG	GAC	GGG	CTG
LEU	VAL	SER	PRO	ARG	VAL	LEU	GLU	VAL	ASP	THR	GLN	GLY	THR	VAL	VAL	CYS	SER	LEU	ASP	GLY	LEU
TTC	CCA	GTC	TCG	GAG	GCC	CAG	GTC	CAC	CTG	GCA	CTG	GGG	GAC	CAG	AGG	TTG	AAC	CCC	ACA	GTC	ACC
PHE	PRO	VAL	SER	GLU	ALA	GLN	VAL	HIS	LEU	ALA	LEU	GLY	ASP	GLN	ARG	LEU	ASN	PRO	THR	VAL	THR
TAT	GGC	AAC	GAC	TCC	TTC	TTC	GCC	AAG	GCC	TCA	GTC	AGT	GTG	ACC	GCA	GAG	GAC	GAG	GGC	ACC	CAG
TYR	GLY	ASN	ASP	SER	PHE	SER	ALA	LYS	ALA	SER	VAL	SER	VAL	THR	ALA	GLU	ASP	GLU	GLY	THR	GLN
CGG	CTG	ACG	TGT	GCA	GTA	ATA	CTG	GGG	AAC	CAG	AGC	CAG	GAG	ACA	CTG	CAG	ACA	GTG	ACC	ATC	TAC
ARG	LEU	THR	CYS	ALA	VAL	ILE	LEU	GLY	ASN	GLN	SER	GLN	GLU	THR	LEU	GLN	THR	VAL	THR	ILE	TYR
AGC	TTT	CCG	GCG	CCC	AAC	GTG	ATT	CTG	ACG	AAG	CCA	GAG	GTC	TCA	GAA	GCG	ACC	GAG	GTG	ACA	GTG
SER	PHE	PRO	ALA	PRO	ASN	VAL	ILE	LEU	THR	LYS	PRO	GLU	VAL	SER	GLU	GLY	THR	GLU	VAL	THR	VAL
AAG	TGT	GAG	GCC	CAC	CCT	AGA	GCC	AAG	GTG	ACG	CTG	AAT	GGG	GTT	CCA	GCC	CAG	CCA	CTG	GGC	CCG
LYS	CYS	GLU	ALA	HIS	PRO	ARG	ALA	LYS	VAL	THR	LEU	ASN	GLY	VAL	PRO	ALA	GLN	PRO	LEU	GLY	PRO
AGG	GCC	CAG	CTC	CTG	CTG	LEU	LYS	ACC	CCA	GAG	GAC	AAC	GGG	CGC	AGC	TTT	TCC	TGC	TCT	GCA	ACC
ARG	ALA	GLN	LEU	LEU	LEU	LEU	ALA	THR	PRO	PRO	GLU	ASP	ASN	GLY	ARG	SER	PHE	CYS	SER	ALA	THR
CTG	GAG	GTG	GCC	GCG	CAG	CTT	ATA	CAC	AAG	AAC	CAG	ACC	CGG	GAG	CTT	CGT	GTC	CTG	TAT	GGC	CCC
LEU	GLU	VAL	ALA	GLY	GLN	LEU	ILE	HIS	LYS	ASN	GLN	THR	ARG	GLU	LEU	ARG	VAL	LEU	TYR	GLY	PRO
CGA	CTG	GAC	GAG	AGG	GAT	TGT	CCG	GGA	AAC	TGG	ACG	TGG	CCA	GAA	AAT	TCC	CAG	CAG	ACT	CCA	ATG
ARG	LEU	ASP	GLU	ARG	ASP	CYS	PRO	GLY	ASN	TRP	THR	TRP	PRO	GLU	ASN	SER	GLN	GLN	THR	PRO	MET
TGC	CAG	GCT	TGG	GGG	AAC	CCA	TTG	CCC	GAG	CTC	AAG	TGT	CTA	AAG	GAT	GGC	ACT	TTC	CCA	CTG	CCC
CYS	GLN	ALA	TRP	GLY	ASN	PRO	LEU	PRO	PRO	GLU	LEU	CYS	LEU	LYS	ASP	GLY	THR	PHE	PRO	LEU	PRO

FIG. 1B

ATC GGG GAA TCA GTG ACT GTC ACT CGA GAT CTT GAG GGC ACC TAC CTC TGT CGG GCC AGG AGC ACT
 ILE GLY GLU SER VAL THR VAL THR ARG ASP LEU GLU GLY THR TYR LEU CYS ARG ALA ARG SER THR

CAA GGG GAG GTC ACC CGC GAG GTG ACC GTG AAT GTG CTC TCC CCC CGG TAT GAG ATT GTC ATC ATC
 GLN GLY GLU VAL THR ARG GLU VAL THR VAL ASN VAL LEU SER PRO ARG TYR GLU ILE VAL ILE ILE

ACT GTG GTA GCA GCC GCA GTC ATA ATG GGC ACT GCA GGC CTC ACC AGC TAC CTC TAT AAC CGC CAG
 THR VAL VAL ALA ALA ALA VAL ILE MET GLY THR ALA GLY LEU SER THR TYR LEU TYR ASN ARG GLN

CGG AAG ATC AAG AAA TAC AGA CTA CAA CAG GCC CAA AAA GGG ACC CCC ATG AAA CCG AAC ACA CAA
 ARG LYS ILE LYS LYS TYR ARG LEU GLN GLN ALA GLN LYS GLY THR PRO MET LYS PRO ASN THR GLN

GCC ACG CCT CCC TGA ACCTATCCCG GGACAGGGCC TCTTCTCTCGG CCTTCCCATTA TTGGTGGCAG TGGTGCCACA
 ALA THR PRO PRO ***

CTGAACAGAG TGAAGACAT ATGCCATGCA GCTACACCTA CCGGCCCTGG GACGCCGGAG GACAGGGCAT TGTCTCAGT

CAGATACAAC AGCATTTGGG GCCATGGTAC CTGCACACCT AAAACACTAG GCCACGCCATC TGATCTGTAG TCACATGACT

AAGCCAAGAG GAAGGAGCAA GACTCAAGAC ATGATTGATG GATGTTAAAG TCTAGCCTGA TGAGAGGGGA AGTGGTGGGG

GAGACATAGC CCCACCATGA GGACATACAA CTGGGAAATA CTGAAACTTG CTGCCCTATTG GGTATGCTGA GGCCACACAGA

CTTACAGAAG AAGTGGCCCT CCATAGACAT GTGTAGCATC AAAACACAAA GGCCACACT TCCTGACGGA TGCCAGCTTG

GGCACTGCTG TCTACTGACC CCAACCCTTG ATGATATGTA TTTATTTCATT TGTTATTTTA CCAGCTATTT ATTGAGTGTC

TTTTATGTAG GCTAAATGAA CATAGGTCTC TGGCCTCAGG GAGCTCCCAG TCCATGTCAC ATTCAAGGTC ACCAGGTACA

GTTGTACAGG TTGTACACTG CAGGAGAGTG CCTGGCAAAA AGATCAAAATG GGGCTGGGAC TTCTCATTTGG CCAACCTGCC

TTTCCCCAGA AGGAGTGATT TTTCTATCGG CACAAAAGCA CTATATGGAC TGGTAATGCT TCACAGGTTT AGAGATTACC

FIG. 1C

CAGTGAGGCC TTATTCCTCC CTTCCCCCCA AACTGACAC CTTGTTAGC CACCTCCCCA CCCACATACA TTTCTGCCAG
 TGTTACAATG AACTCAGCG GTCAATGCTG GACATGAGTG CCCAGGGAAT ATGCCCAAGC TATGCCCTTGT CCTCTTGTCC
 TGTTTGCATT TCACTGGGAG CTTGCACTAT TGCAGCTCCA GTTCTCTGCA GTGATCAGGG TCCTGCAAGC AGTGGGAAG
 GGGGCCAAGG TATTGGAGGA CTCCTCCCA CTTTGGAG GGTCAATCCG GTGTGTGTGT GTGTGTATGT GTAGACAAGC
 TCTCGCTCTG TCACCCAGGC TGGAGTGCAG TGGTCAATC ATGTTCACT GCAGTCTTGA CCTTTTGGGC TCAAGTGATC
 CTCCCACCTC AGCCTCCTGA GTAGCTGGA CCATAGGCTC ACAACACCCAC ACCTGGCAAA TTTGATTTT TTTTTTTTTT
 TCAGAGACGG GGTCTCGCAA CATTCCTTG TGTAGTTAA TAAAGCTTTC TCAACTGCCA AAAAAAAA
 AAAAAA

FIG. 1D

FIG. 2A

TTCACATCAA AACTCCTATA CTGACCTGAG ACAGAGGCAG CAGTGATACC CACCTGAGAG ATCCTGTGTT TGA
 ACAACTG CTTCCCAAAA CGGAAAGTAT TTCAAGCCTA AACCTTTGGG TGAAGAAGAC TCTTGAAGTC ATG ATT
 met ile
 GCT TCA CAG TTT CTC TCA GCT CTC ACT TTG GTG CTT CTC ATT AAA GAG AGT GGA GCC TGG
 ala ser gln phe leu ser ala leu thr leu val leu leu ile lys glu ser gly ala trp
 TCT TAC AAC ACC TCC ACG GAA GCT ATG ACT TAT GAT GAG GCC AGT GCT TAT TGT CAG CAA
 ser tyr asn thr ser thr glu ala met thr tyr asp glu ala ser ala tyr cys gln gln
 AGG TAC ACA CAC CTG GTT GCA ATT CAA AAC AAA GAA GAG ATT GAG TAC CTA AAC TCC ATA
 arg tyr thr his leu val ala ile gln asn lys glu glu ile glu tyr leu asn ser ile
 TTG ACC TAT TCA CCA AGT TAT TAC TGG ATT GGA ATC AGA AAA GTC AAC AAT GTG TGG GTC
 leu ser tyr ser pro ser tyr tyr trp ile gly ile arg lys val asn asn val trp val
 TGG GTA GGA ACC CAG AAA CCT CTG ACA GAA GAA GCC AAG AAC TGG GCT CCA GGT GAA CCC
 trp val gly thr gln lys pro leu thr glu glu ala lys asn trp ala pro gly glu pro
 AAC AAT AGG CAA AAA GAT GAG GAC TGC GTG GAG ATC TAC ATC AAG AGA GAA AAA GAT GTG
 asn asn arg gln lys asp glu asp cys val glu ile tyr ile lys arg glu lys asp val
 GGC ATG TGG AAT GAT GAG AGG TGC AGC AAG AAG AAG CTT GCC CTA TGC TAC ACA GCT GCC
 gly met trp asn asp glu arg cys ser lys lys lys leu ala leu cys tyr thr ala ala
 TGT ACC AAT ACA TCC TGC AGT GGC CAC GGT GAA TGT GTA GAG ACC ATC AAT AAT TAC ACT
 cys thr asn thr ser cys ser gly his gly glu cys val glu thr ile asn asn tyr thr
 TGC AAG TGT GAC CCT GGC TTC AGT GGA CTC AAG TGT GAG CAA ATT GTG AAC TGT ACA GCC
 cys lys cys asp pro gly phe ser gly leu lys cys glu gln ile val asn cys thr ala

CTG GAA TCC CCT GAG CAT GGA	AGC CTG GTT TGC AGT CAC CCA CTG GGA AAC TTC AGC TAC
leu glu ser pro glu his gly	ser leu val cys ser his pro leu gly asn phe ser tyr
AAT TCT TCC TGC TCT ATC AGC	TGT GAT AGG GGT TAC CTG CCA AGC ATG GAG ACC ATG
asn ser ser cys ser ile ser	cys asp arg gly tyr leu pro ser ser met glu thr met
CAG TGT ATG TCC TCT GGA GAA	TGG AGT GCT CCT ATT CCA GCC TGC AAT GTG GTT GAG TGT
gln cys met ser ser gly glu	trp ser ala pro ile pro ala cys asn val val glu cys
GAT GCT GTG ACA AAT CCA GCC	AAT GGG TTC GTG GAA TGT TTC CAA AAC CCT GGA AGC TTC
asp ala val thr asn pro ala	asn gly phe val glu cys phe gln asn pro gly ser phe
CCA TGG AAC ACA ACC TGT ACA	TTT GAC TGT GAA GAA GGA TTT GAA CTA ATG GGA GCC CAG
pro trp asn thr thr cys thr	phe asp cys glu glu gly phe glu leu met gly ala gln
AGC CTT CAG TGT ACC TCA TCT	GGG AAT TGG GAC AAC GAG AAG CCA ACG TGT AAA GCT GTG
ser leu gln cys thr ser ser	gly asn trp asp asn glu lys pro thr cys lys ala val
ACA TGC AGG GCC GTC CGC CAG	CCT CAG AAT GGC TCT GTG AGG TGC AGC CAT TCC CCT GCT
thr cys arg ala val arg gln	pro gln asn gly ser val arg cys ser his ser pro ala
GGA GAG TTC ACC TTC AAA TCA	TCC TGC AAC TTC ACC TGT GAG GAA GGC TTC ATG TTG CAG
gly glu phe thr phe lys ser	ser cys asn phe thr cys glu glu gly phe met leu gln
GGA CCA GCC CAG GTT GAA TGC	ACC ACT CAA GGG CAG TGG ACA CAG CAA ATC CCA GTT TGT
gly pro ala gln val glu cys	thr thr gln gly gln trp thr gln gln ile pro val cys
GAA GCT TTC CAG TGC ACA GCC	TTG TCC AAC CCC GAG CGA GGC TAC ATG AAT TGT CTT CCT
glu ala phe gln cys thr ala	leu ser asn pro glu arg gly tyr met asn cys leu pro

FIG. 2B

AGT GCT TCT GGC AGT TTC CGT TAT GGG TCC ACC TGT GAG TTC TCC TGT GAG CAG GGT TTT	ser ala ser gly ser phe arg tyr gly ser ser cys glu phe ser cys glu gln gly phe
CTG TTG AAG GGA TCC AAA AGG CTC CAA TGT GGC CCC ACA GGG GAG TGG GAC AAC GAG AAG	val leu lys gly ser lys arg leu gln cys gly pro thr gly glu trp asp asn glu lys
CCC ACA TGT GAA GCT GTG AGA TGC GAT GCT GTC CAC CAG CCC CCG AAG GGT TTG GTG AGG	pro thr cys glu ala val arg cys asp ala val his gln pro pro lys gly leu val arg
TGT GCT CAT TCC CCT ATT GGA GAA TTC ACC TAC AAG TCC TCT TGT GCC TTC AGC TGT GAG	cys ala his ser pro ile gly glu phe thr tyr lys ser ser cys ala phe ser cys glu
GAG GGA TTT GAA TTA TAT GGA TCA ACT CAA CTT GAG TGC ACA TCT CAG GGA CAA TGG ACA	glu gly phe glu leu tyr gly ser thr gln leu glu cys thr ser gln gly gln trp thr
GAA GAG GTT CCT TCC TGC CAA GTG GTA AAA TGT TCA AGC CTG GCA GTT CCG GGA AAG ATC	glu glu val pro ser cys gln val val lys cys ser ser leu ala val pro pro gly lys ile
AAC ATG AGC TGC AGT GGC GAG CCC GTG TTT GGC ACT GTG TGC AAG TTC GCC TGT CCT GAA	asn met ser cys ser gly glu pro val phe gly thr val cys lys phe ala cys pro glu
GGA TGG ACG CTC AAT GGC TCT GCA GCT CGG ACA TGT GGA GCC ACA GGA CAC TGG TCT GGC	gly trp thr leu asn gly ser ala ala arg thr cys gly ala thr gly his trp ser gly
CTG CTA CCT ACC TGT GAA GCT CCC ACT GAG TCC AAC ATT CCC TTT GTA GCT GGA CTT TCT	leu leu pro thr cys glu ala pro thr glu ser asn ile pro leu val ala gly leu ser
GCT GCT GGA CTC TCC CTC CTG ACA TTA GCA CCA TTT CTC CTC TGG CTT CGG AAA TGC TTA	ala ala gly leu ser leu leu thr leu ala pro phe leu leu trp leu arg lys cys leu
CGG AAA GCA AAG AAA TTT GTT CCT GCC AGC AGC TGC CAA AGC CTT GAA TCA GAC GGA AGC	arg lys ala lys lys phe val pro ala ser ser cys gln ser leu glu ser asp gly ser

FIG. 2C

TAC CAA AAG CCT TCT TAC ATC CTT TAA GTTCAA AGAATCAGAA ACAGGTGCAT CTGGGGAAC T A
 tyr gln lys pro ser tyr ile leu ***
 GAGGATAC ACTGAAGTTA ACAGAGACAG ATAACCTCTCC TCGGGTCTCT GGCCTTCTT GCCTACTATG CCAG
 ATGCCCT TTATGGCTGA AACCGCAACA CCCATCACCA CTTCAATAGA TCAAAAGTCCA GCAGGCAAGG ACGGCCCT
 TCA ACTGAAAAGA CTCAGTGTTT CCTTTCCTAC TCTCAGGATC AAGAAAGTGT TGGCTAATGA AGGGAAGGA
 TATTTTCTTC CAAGCAAAGG TGAAGAGACC AAGACTCTGA AATCTCAGAA TTCCCTTTTCT AACTCTCCCT TG
 CTGGCTGT AAAATCTTGG CACAGAAACA CAATATTTG TGGCTTCTT TCTTTTGCCC TTCACAGTGT TTCCA
 CAGCT GATTACACAG TTGCTGTCTAT AAGAATGAAT AATAATTATC CAGAGTTTGA AGGAAAAAAA TGACTAAA
 AA TATTATAACT TAAAAAAATG ACAGATGTTG AATGCCCCACA GGCAATGCA TGGAGGGTTG TTAATGGTGC
 AAATCCTACT GAATGCTCTG TGGAGGGGTT ACTATGCACA ATTTAATCAG TTTCATCCCT ATGGGATTCA GTG
 CTCTTA AAGAGTTCTT AAGGATTGTG ATATTTTAC TTGCATTGAA TATATTATAA TCTTCCATAC TTCTTC
 ATTC AATACAAGTG TGGTAGGAC TTAAAAAACT TGTAATGCT GTCAACTATG ATATGGTAAA AGTTACTTA
 T TCTAGATTAC CCCCTCATTT TTTATTAACA AATTATGTTA CATCTGTTT AAATTATTTT CAAAAAGGA A
 ACTATTGTC CCTAGCAAG GCATGATGTT AACCAGAATA AAGTTCTGAG TGTCTTACT ACAGTTGTTT TTTC
 AAAACA TGGTAGAATT GGAGAGTAAA AACTGAATGG AAGGTTTGA TATTGTCAGA TATTTTTC AAAAAAT
 GTG GTTTCACCA TGA AAAA ACTT CCATGAGGCC AAACGTTTTG AACTAATAAA AGCATAAATG CAAACACACA
 AAGGTATAAT TTTATGAATG TCTTTGTTGG AAAAGAATAC AGAAAGATGG ATGTGCTTG CATTCCTACA AA
 GATGTTG TCAGATGTGA TATGTAAACA TAATTCTTGT ATATTATGA AGATTTTAAA TTCACAATAG AAAC T

FIG. 2D

CACCA TGTAAAGAG TCATCTGGTA GATTTTAAAC GAATGAAGAT GTCTAATAGT TATTCCTAT TTGTTTTC
TT CTGTATGTTA GGGTGCTCTG GAAGAGAGGA ATGCTGTGT GAGCAAGCAT TTATGTTTAT TTATAAGCAG
ATTTAACAAT TCCAAAGGAA TCTCCAGTTT TCAGTTGATC ACTGGCAATG AAAAATTCTC AGTCAGTAAT TGC
CAAAGCT GCTCTAGCCT TGAGGAGTGT GAGAATCAAA ACTCTCCTAC ACTTCCATTA ACTTAGCATG TGTGTA
AAAA AAAAGTTTCA GAGAAGTTCT GGCTGAACAC TGGCAACGAC AAAGCCAACA GTCAAAACAG AGATGTGAT
A AGGATCAGAA CAGCAGAGGT TCTTTTAAAG GGCAGAAAA ACTCTGGGAA ATAAGAGAGA ACAACTACTG T
GATCAGGCT ATGTATGGAA TACAGTGTTA TTTTCTTTGA AATTGTTTAA GTGTGTAA TATTTATGTA AACT
GCATTA GAAATTAGCT GTGTGAATA CCAGTGTGGT TTGTGTTTGA GTTTTATTGA GAATTTTAAA TTATAAC
TTA AAATATTTTA TAAATTTTAA AGTATATATT TATTTAAGCT TATGTCAGAC CTATTGACA TAACACTATA
AAGGTTGACA ATAAATGTGC TTATGTTT

FIG. 2E

FIG. 3A

CGGGCCCTCAC TGGCTTCAGG AGCTGAATAC CCTCCAGGC ACACACAGGT GGGACACAAA TAAGGGTTTT GGA
 ACCACTA TTTTCTCATC ACGACAGCAA CTTAAA ATG CCT GGG AAG ATG GTC GTG ATC CTT GGA GCC
 met pro gly lys met val val ile leu gly ala
 TCA AAT ATA CTT TGG ATA ATG TTT GCA GCT TCT CAA GCT TTT AAA ATC GAG ACC ACC CCA
 ser asn ile leu trp ile met phe ala ala ser gln ala phe lys ile glu thr thr pro
 GAA TCT AGA TAT CTT GCT CAG ATT GGT GAC TCC GTC TCA TTG ACT TGC AGC ACC ACA GGC
 glu ser arg tyr leu ala gln ile gly asp ser val ser leu thr cys ser thr thr gly
 TGT GAG TCC CCA TTT TTC TCT TGG AGA ACC CAG ATA GAT AGT CCA CTG AAT GGG AAG GTG
 cys glu ser pro phe phe ser thr arg thr gln ile asp ser pro leu asn gly lys val
 ACG AAT GAG GGG ACC ACA TCT ACG CTG ACA ATG AAT CCT GTT AGT TTT GGG AAC GAA CAC
 thr asn glu gly thr thr ser thr leu thr met asn pro val ser phe gly asn glu his
 TCT TAC CTG TGC ACA GCA ACT TGT GAA TCT AGG AAA TTG GAA AAA GGA ATC CAG GTG GAG
 ser tyr leu cys thr ala thr cys glu ser arg lys leu glu lys gly ile gln val glu
 ATC TAC TCT TTT CCT AAG GAT CCA GAG ATT CAT TTG AGT GGC CCT CTG GAG GCT GGG AAG
 ile tyr ser phe pro lys asp pro glu ile his leu ser gly pro leu glu ala gly lys
 CCG ATC ACA GTC AAG TGT TCA GTT GCT GAT GTA TAC CCA TTT GAC AGG CTG GAG ATA GAC
 pro ile thr val lys cys ser val ala asp val tyr pro phe asp arg leu glu ile asp
 TTA CTG AAA GGA GAT CAT CTC ATG AAG AGT CAG GAA TTT CTG GAG GAT GCA GAC AGG AAG
 leu leu lys gly asp his leu met lys ser gln glu phe leu glu asp ala asp arg lys
 TCC CTG GAA ACC AAG AGT TTG GAA GTA ACC TTT ACT CCT GTC ATT GAG GAT ATT GGA AAA
 ser leu glu thr lys ser leu glu val thr phe thr pro val ile glu asp ile gly lys
 GTT CTT GTT TGC CGA GCT AAA TTA CAC ATT GAT GAA ATG GAT TCT GTG CCC ACA GTA AGG
 val leu val cys arg ala lys leu his ile asp glu met asp ser val pro thr val arg

CAG GCT GTA AAA GAA TTG CAA GTC TAC ATA TCA CCC AAG AAT ACA GTT ATT TCT GTG AAT	gln ala val lys glu leu gln val tyr ile ser pro lys asn thr val ile ser val asn
CCA TCC ACA AAG CTG CAA GAA GGT GGC TCT GTG ACC ATG ACC TGT TCC AGC GAG GGT CTA	pro ser thr lys leu gln glu gly gly ser val thr met thr cys ser ser glu gly leu
CCA CCT CCA GAG ATT TTC TCG ACT AAG AAA TTA GAT AAT GGG AAT CTA CAG CAC CTT TCT	pro ala pro glu ile phe trp ser lys lys leu asp asn gly asn leu gln his leu ser
CGA AAT GCA ACT CTC ACC TTA ATT GCT ATG AGG ATG GAA GAT TCT TCT GGA ATT TAT GTG TGT	gly asn ala thr leu thr leu ile ala met arg met glu asp ser gly ile tyr val cys
GAA GGA GTT AAT TTG ATT GGG AAA AAC AGA AAA GAG GTG GAA TTA ATT GTT CAA GCA TTC	glu gly val asn leu ile gly lys asn arg lys glu val glu leu ile val gln ala phe
CCT AGA GAT CCA GAA ATC GAG ATG AGT GGT GGC CTC GTG AAT GGG AGC TCT GTC ACT GTA	pro arg asp pro glu ile glu met ser gly gly leu val asn gly ser ser val thr val
AGC TGC AAG GTT CCT AGC GTG TAC CCC CTT GAC CGG CTG GAG ATT GAA TTA CTT AAG GGG	ser cys lys val pro ser val tyr pro leu asp arg leu glu ile glu leu leu lys gly
GAG ACT ATT CTG GAG AAT ATA GAG TTT TTG GAG GAT ACG GAT ATG AAA TCT CTA GAG AAC	glu thr ile leu glu asn ile glu phe pro thr ile glu asp thr asp met lys ser leu glu asn
AAA AGT TTG GAA ATG ACC TTC ATC CCT ACC ATT GAA GAT ACT GCA AAA GCT CTT GTT TGT	lys ser leu glu met thr phe phe pro thr ile glu asp thr gly lys ala leu val cys
CAG GCT AAG TTA CAT ATT GAT GAC ATG GAA TTC GAA CCC AAA CAA AGG CAG AGT ACG CAA	gln ala lys leu his ile asp asp met glu phe glu pro lys gln arg gln ser thr gln
ACA CTT TAT GTC AAT GTT GCC CCC AGA GAT ACA ACC GTC TTG GTC AGC CCT TCC TCC ATC	thr leu tyr val asn val ala pro arg thr thr val leu val ser pro ser ser ile
CTG GAG GAA GCC AGT TCT GTG AAT ATG ACA TGC TTG AGC CAG GGC TTT CCT GCT CCG AAA	leu glu glu gly ser val asn met thr cys leu ser gln gly phe pro ala pro lys

ATC CTG TGG AGC AGG CAG CTC CCT AAC GGG GAG CTA CAG CCG CTT TCT TCT GAG AAT GCA ACT
ile leu trp ser arg gln leu pro asn gly glu leu gln pro leu ser glu asn ala thr

CTC ACC TTA ATT TCT ACA AAA ATG GAA GAT TCT GGG GTT TAT TTA TGT GAA GGA ATT AAC
leu thr leu ile ser thr lys met glu asp ser gly val tyr leu cys glu gly ile asn

CAG GCT CGA AGA AGC AGA AAG GAA GTG GAA TTA ATT ATC CAA GTT ACT CCA AAA GAC ATA
gln ala gly arg ser arg lys glu val glu leu ile ile gln val thr pro lys asp ile

AAA CTT ACA CCT TTT CCT TCT GAG AGT GTC AAA GAA GCA GAC ACT GTC ATC ATC TCT TGT
lys leu thr ala phe pro ser glu ser val lys glu gly asp thr val ile ser cys

ACA TGT CGA AAT GTT CCA GAA ACA TGG ATA ATC CTG AAG AAA AAA GCG GAG ACA GGA GAC
thr cys gly asn val pro glu thr trp ile ile leu lys lys lys ala glu thr gly asp

ACA GTA CTA AAA TCT ATA GAT GGC GCC TAT ACC ATC CGA AAG GCC CAG TTG AAG GAT GCG
thr val leu lys ser ile asp gly ala tyr thr ile arg lys ala gln leu lys asp ala

GGA GTA TAT GAA TGT GAA TCT AAA AAC AAA GTT GGC TCA CAA TTA AGA AGT TTA ACA CTT
gly val tyr glu cys glu ser lys asn lys val gly ser gln leu arg ser leu thr leu

GAT GTT CAA GGA AGA GAA AAC AAA GAC TAT TTT TCT CCT GAG CTT CTC GTG CTC TAT
asp val gln gly arg glu asn asn lys asp tyr phe ser pro glu leu val leu tyr

TTT GCA TCC TCC TTA ATA ATA CCT GCC ATT GGA ATG ATA ATT TAC TTT GCA AGA AAA GCC
phe ala ser ser leu ile ile pro ala ile gly met ile ile tyr phe ala arg lys ala

AAC ATG AAG GGG TCA TAT AGT CTT GTA GAA GCA CAG AAA TCA AAA GTG TAG CTAATGCTTG
asn met lys gly ser tyr ser leu val glu ala gln lys ser lys val ***

ATATGTTCAA CTGGAGAC TATTATCTG TGCAAAATCCT TGATACTGCT CATCATTCCT TGAGAAAAAC AAT

GAGCTGA GAGGCAGACT TCCCTGAATG TATTGAACTT GGAAGAAAT GCCCATCTAT GTCCCTTGCT GTGAGC

AAGA AGTCAAAAGTA AAACCTTGCTG CCTGAAGAAC AGTAACTGCC ATCAGATGA GAGAACTGGA GGAGTTCCT

T GATCTGTATA TACAATAACA TAAATTGTAC ATATGTAAAA TAAATTTATG CCATAGCAAG ATTGCTTAAAA

...T GATCTGTATA TACAATAACA TAAATTGTAC ATATGTAAA TAAATTATG CCATAGCAAG ATTCCTTAAAA

TAGCAACAC TCTATATTTA GATTGTTAAA ATAACTAGTG TTGCTTGGAC TATTATAATT TAATGCATGT TAGG
 AAAATT TCACATTAAAT ATTTGCTGAC AGCTGACCTT TGTCTATCTTT CTTCATATTTT ATTCCCTTTC ACAAAT
 TTT ATTCTCTATAT AGTTTATTGA CAATAATTTC AGGTTTGTGTA AAGATGCCGG GTTTTATATT TTTATAGACA
 AATAATAAGC AAAGGGAGCA CTGGGTTGAC TTTCAGGTAC TAAATACCTC AACCTATGGT ATAATGGTTG AC
 TGGGTTTC TCTGTATAGT ACTGGCATGG TACGGAGATG TTTCACGAAG TTTGTTTCATC AGACTCCTGT GCAAC
 TTTC CAATGTGGCC TAAAAATGCA ACTTCTTTT ATTTCTTTT GTAAATGTTT AGGTTTTTT GTATAGTA
 AA GTGATAATT CTGGAATTAA AAA

FIG. 3D

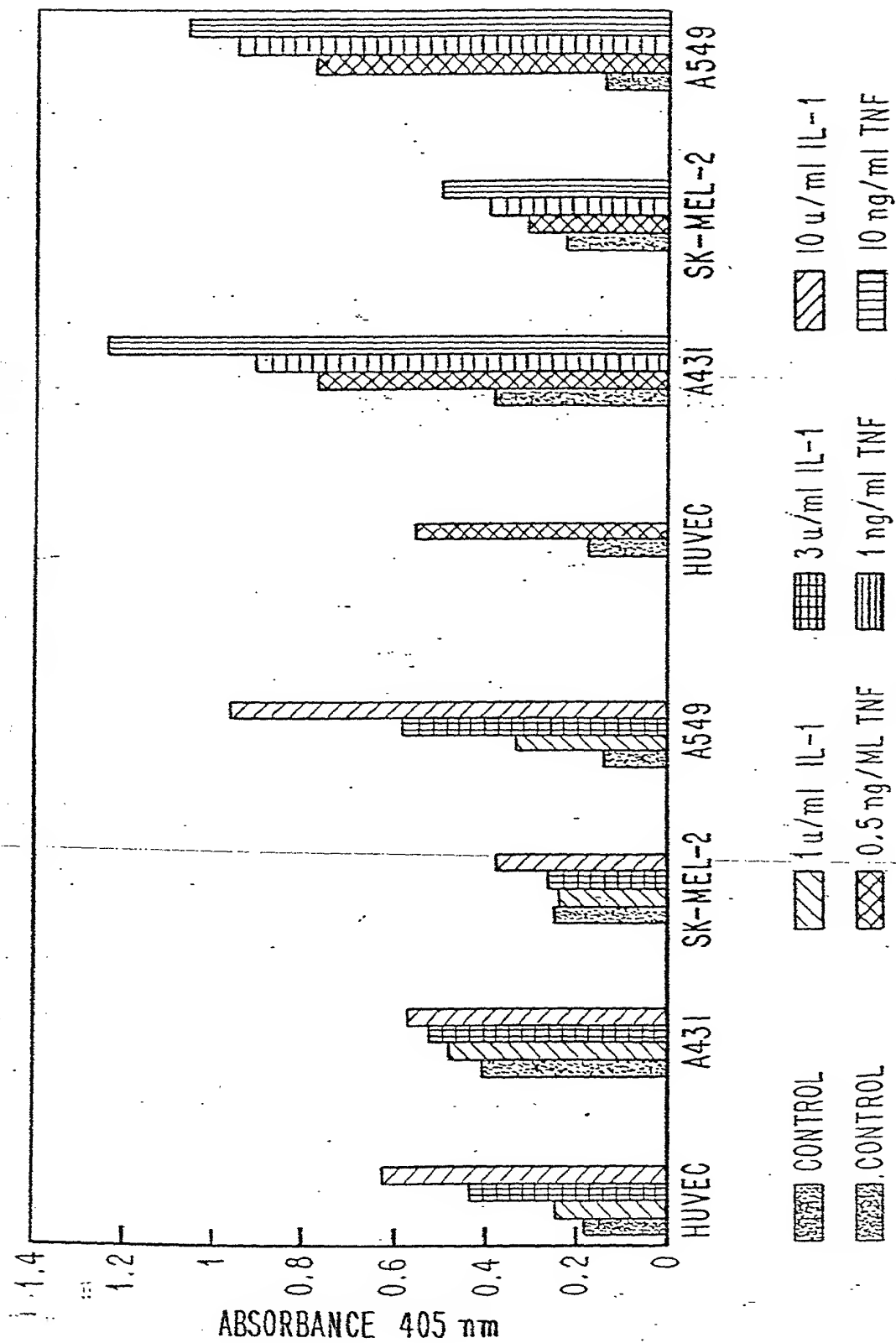


FIG. 4

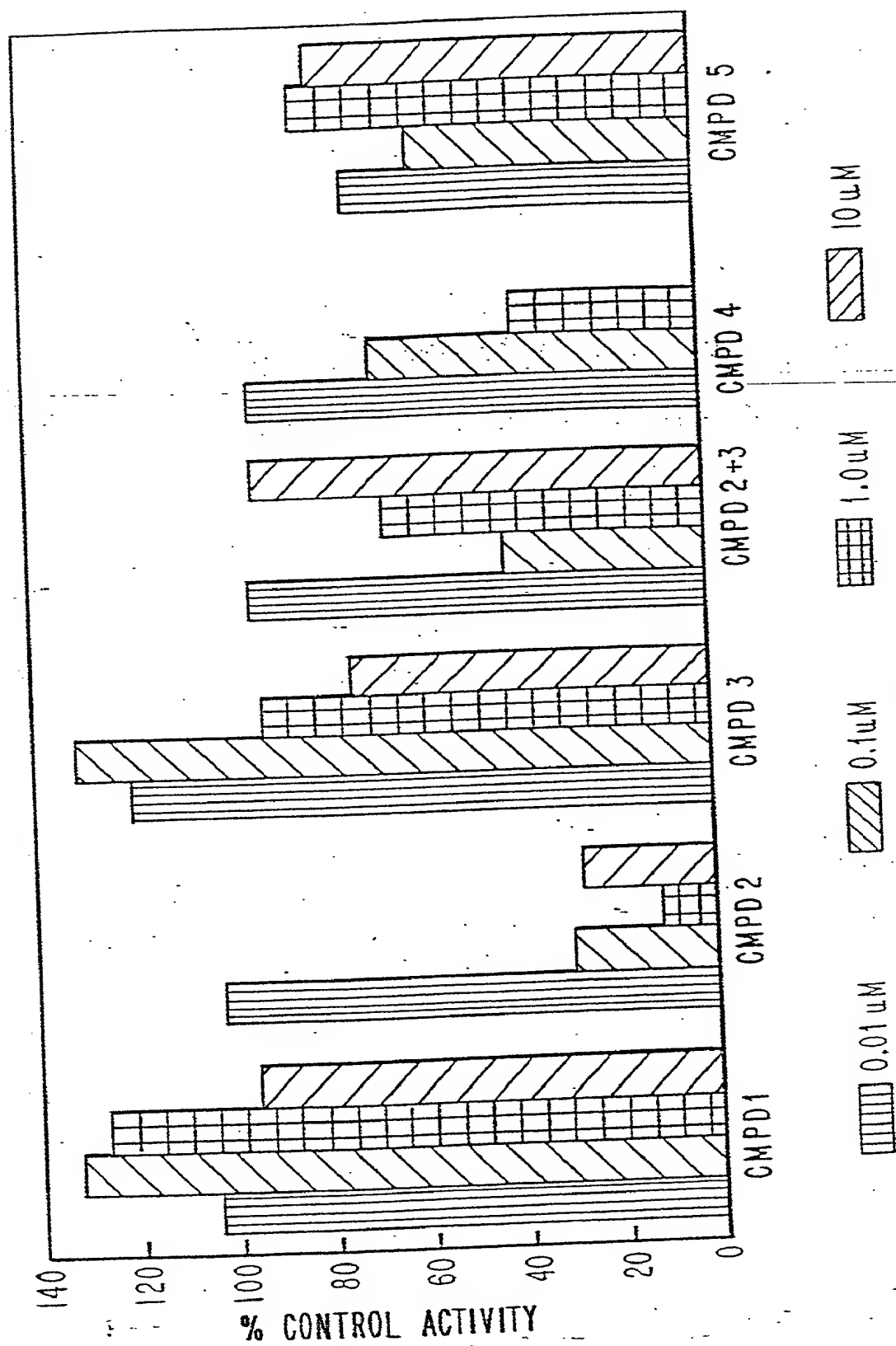


FIG. 5

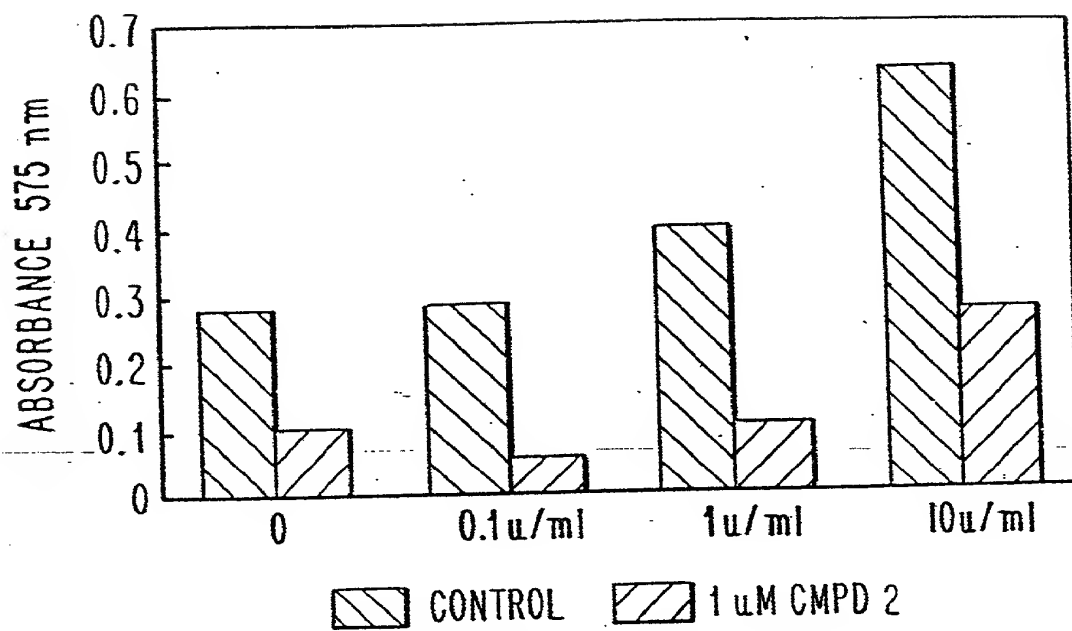


FIG. 6A

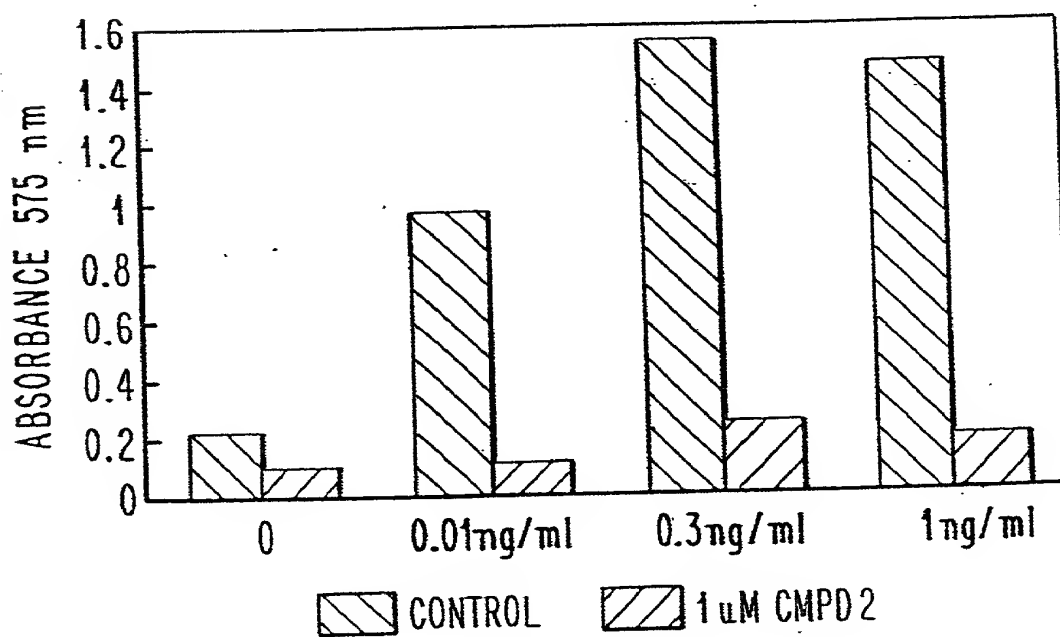


FIG. 6B

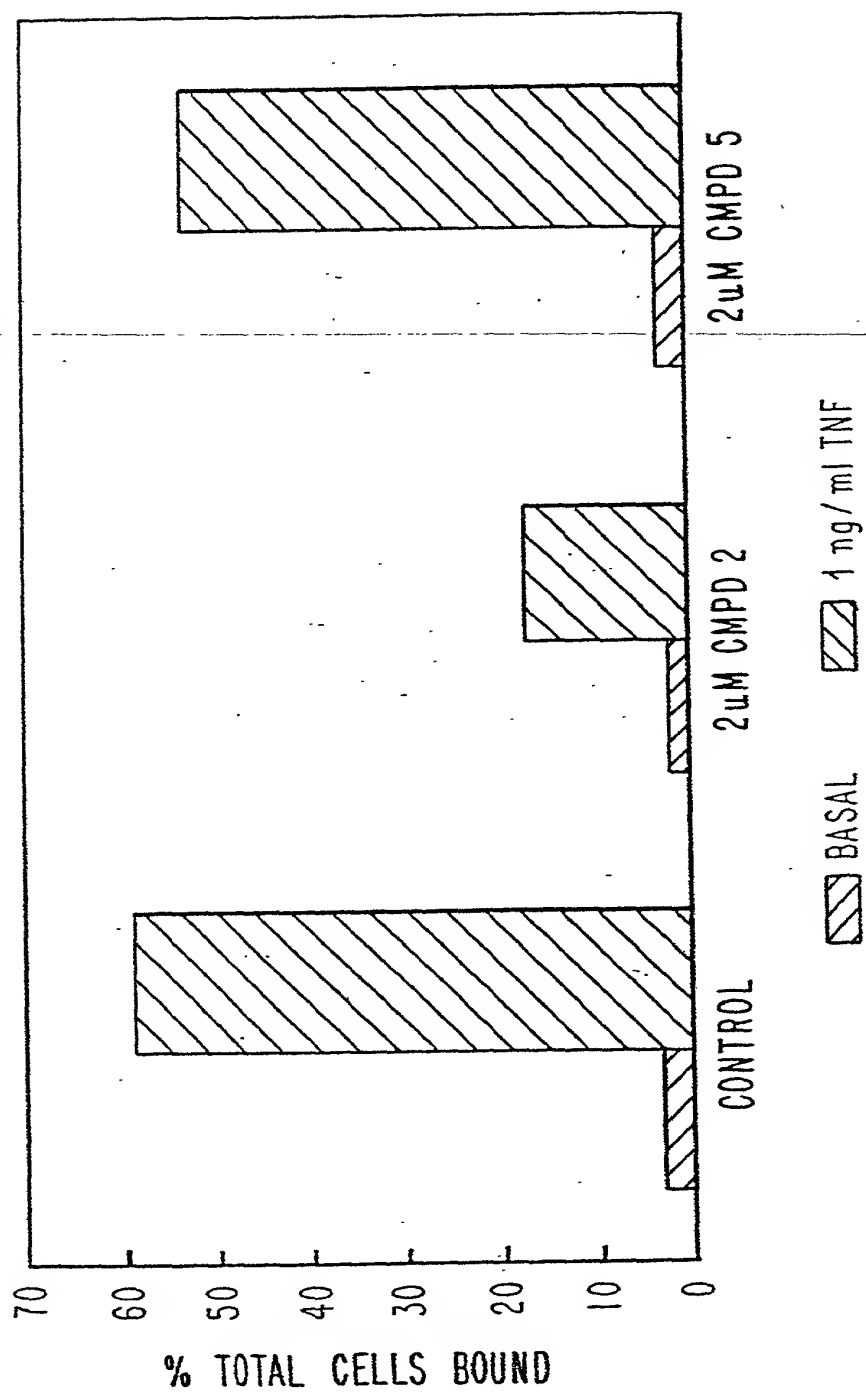
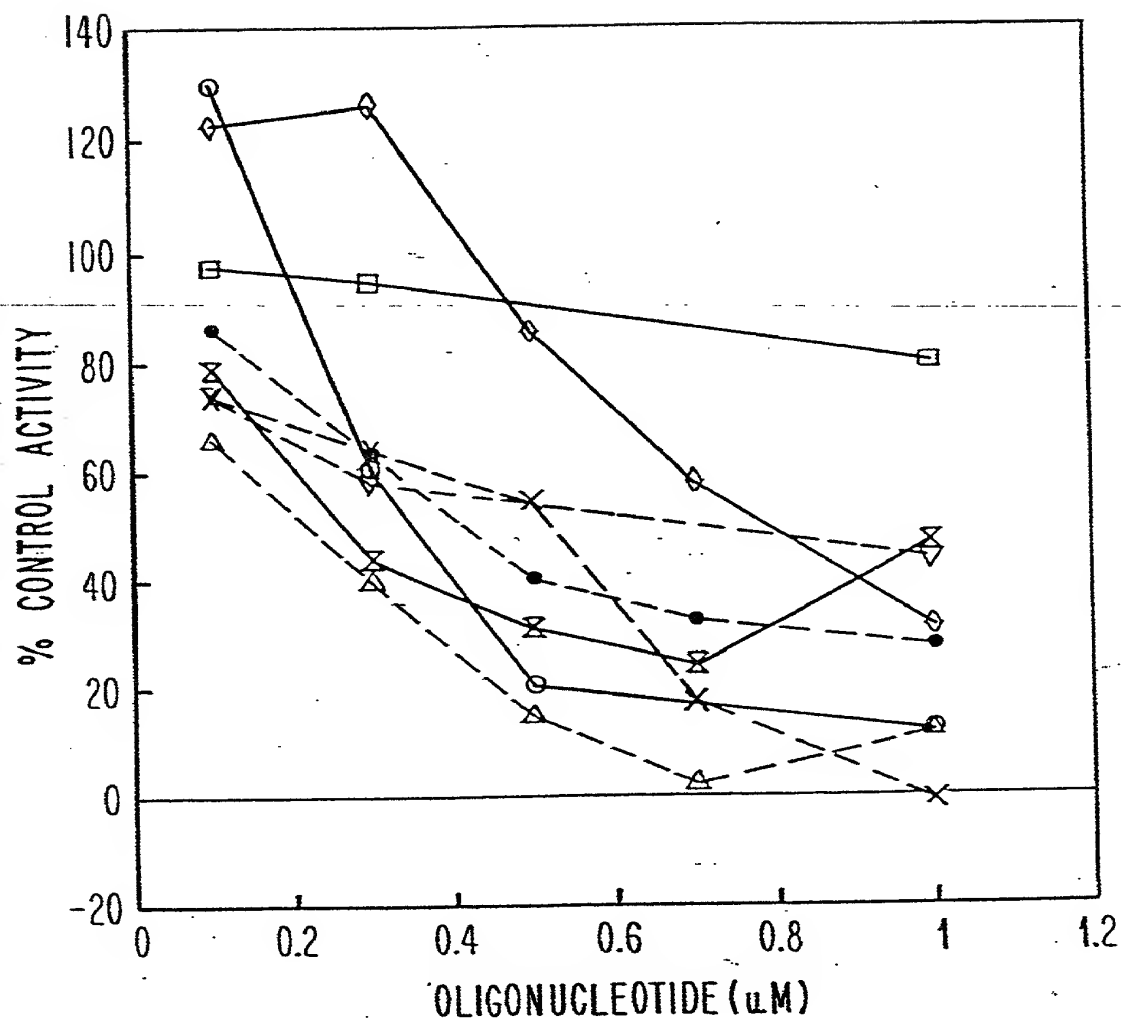


FIG. 7

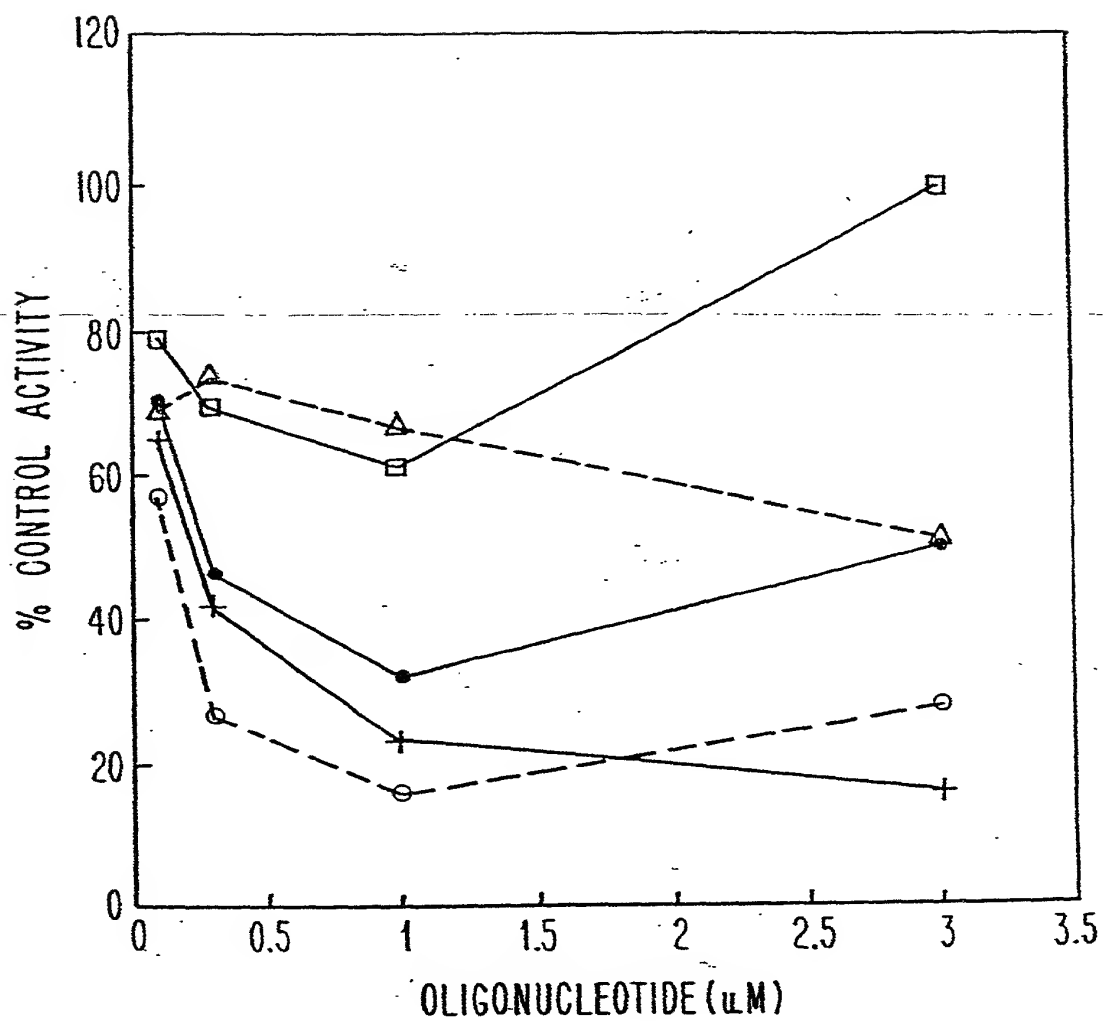
120301-2022000



• 1570 ○ 3067 ▽ 1931 □ 1932
× 1939 ◇ 2307 △ 2302 ⊗ 1938

FIG. 8

099262-101801



• 1570

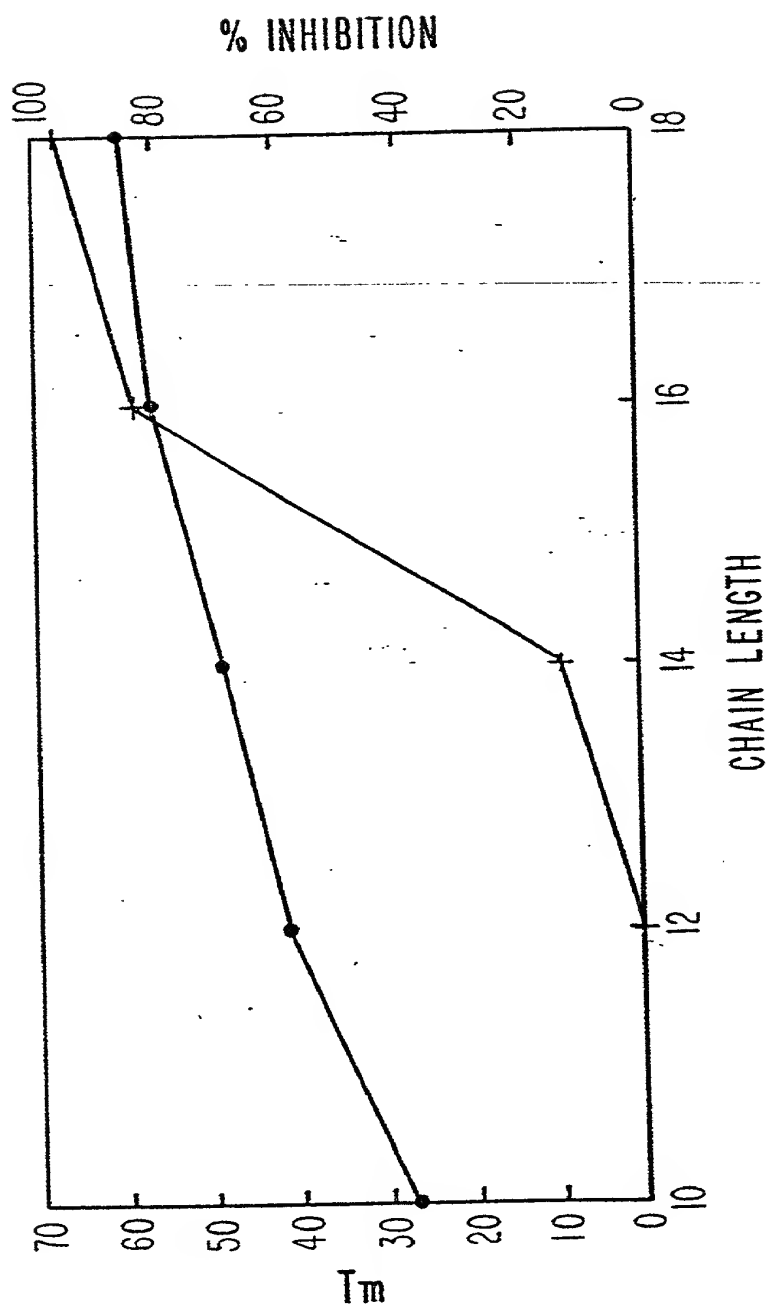
+ 1939

△ 1940

□ 1821

○ 2302

FIG. 9



• T_m + % INHIBITION
100 nM OLIGONUCLEOTIDE

FIG. 10

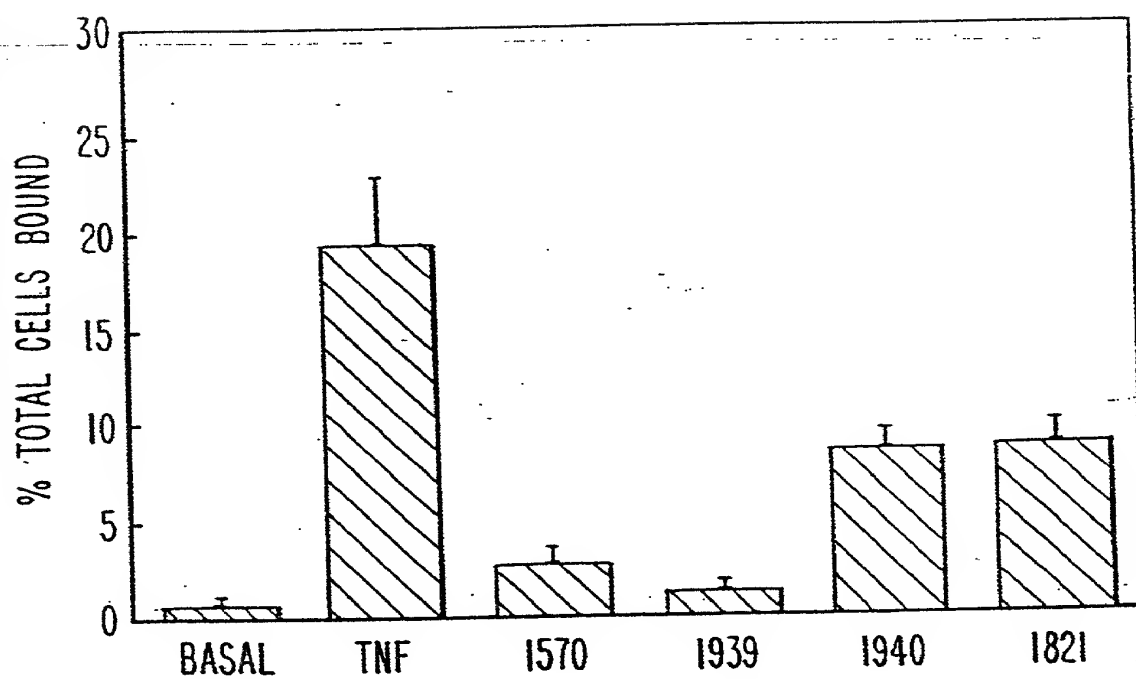


FIG. 11

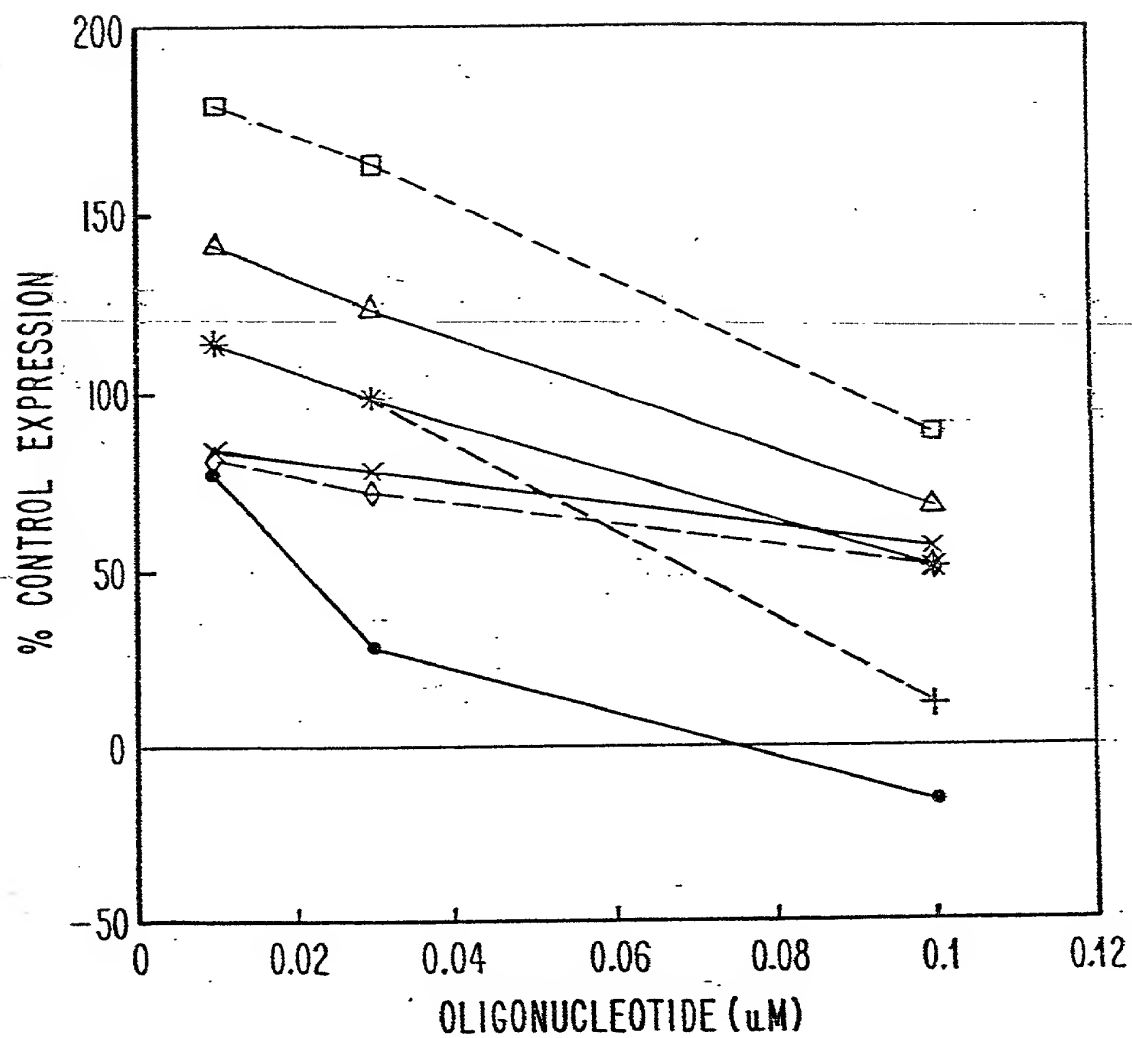


FIG. 12

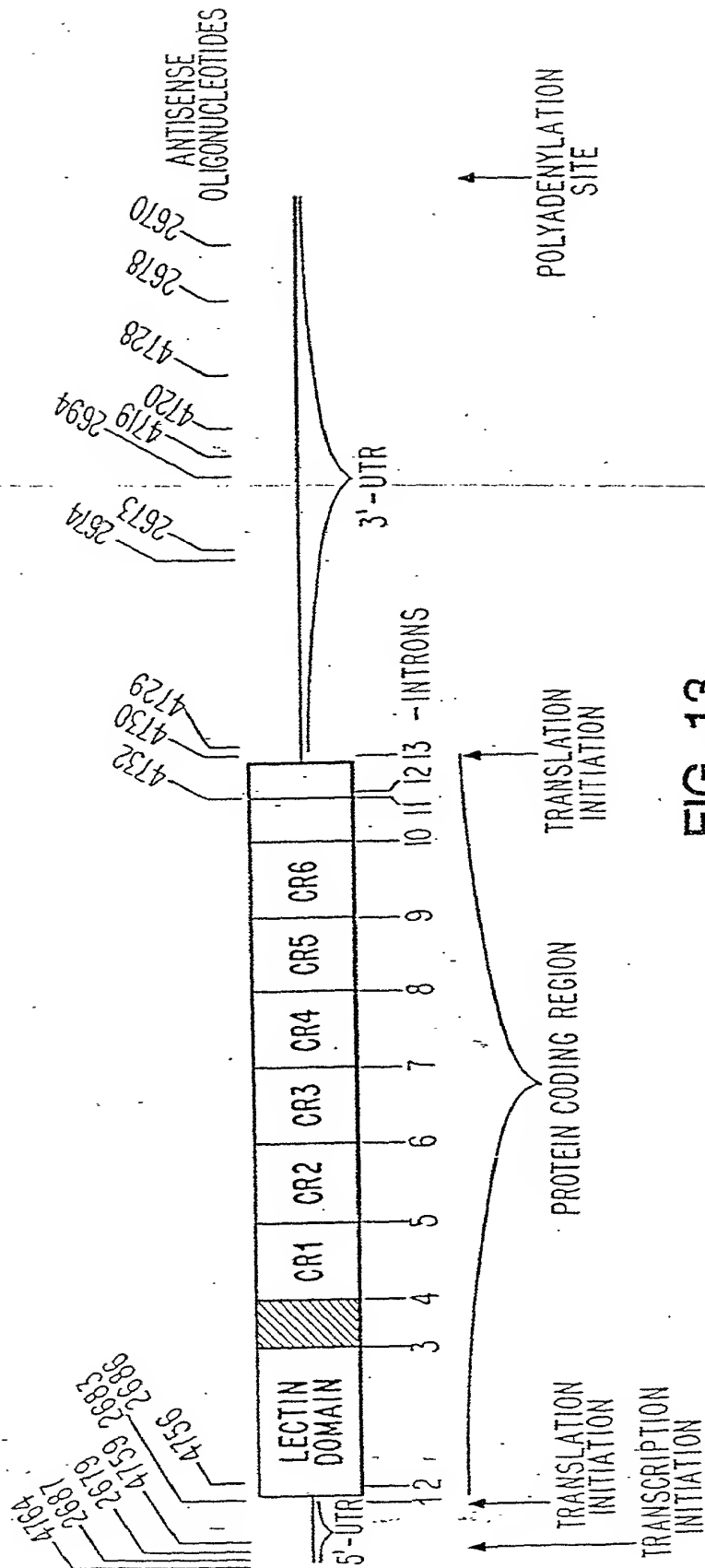


FIG. 13

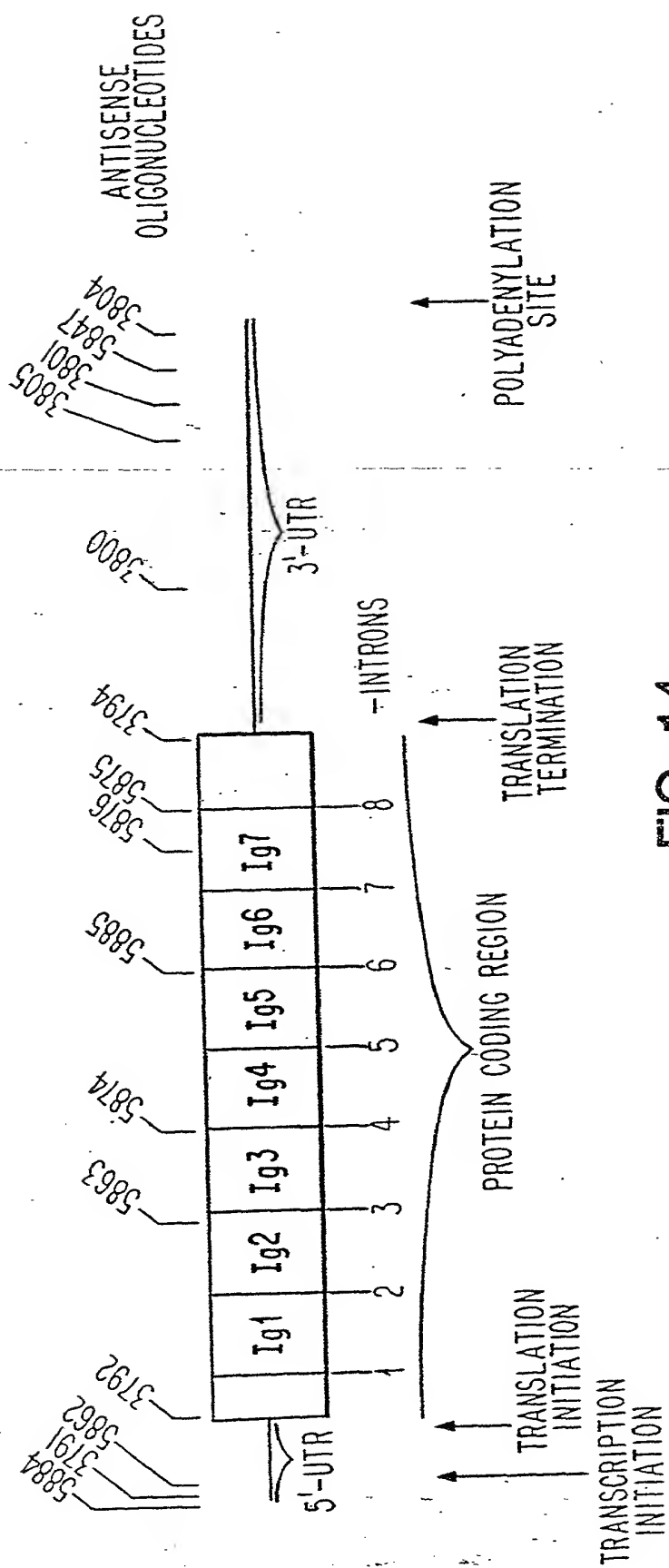


FIG. 14

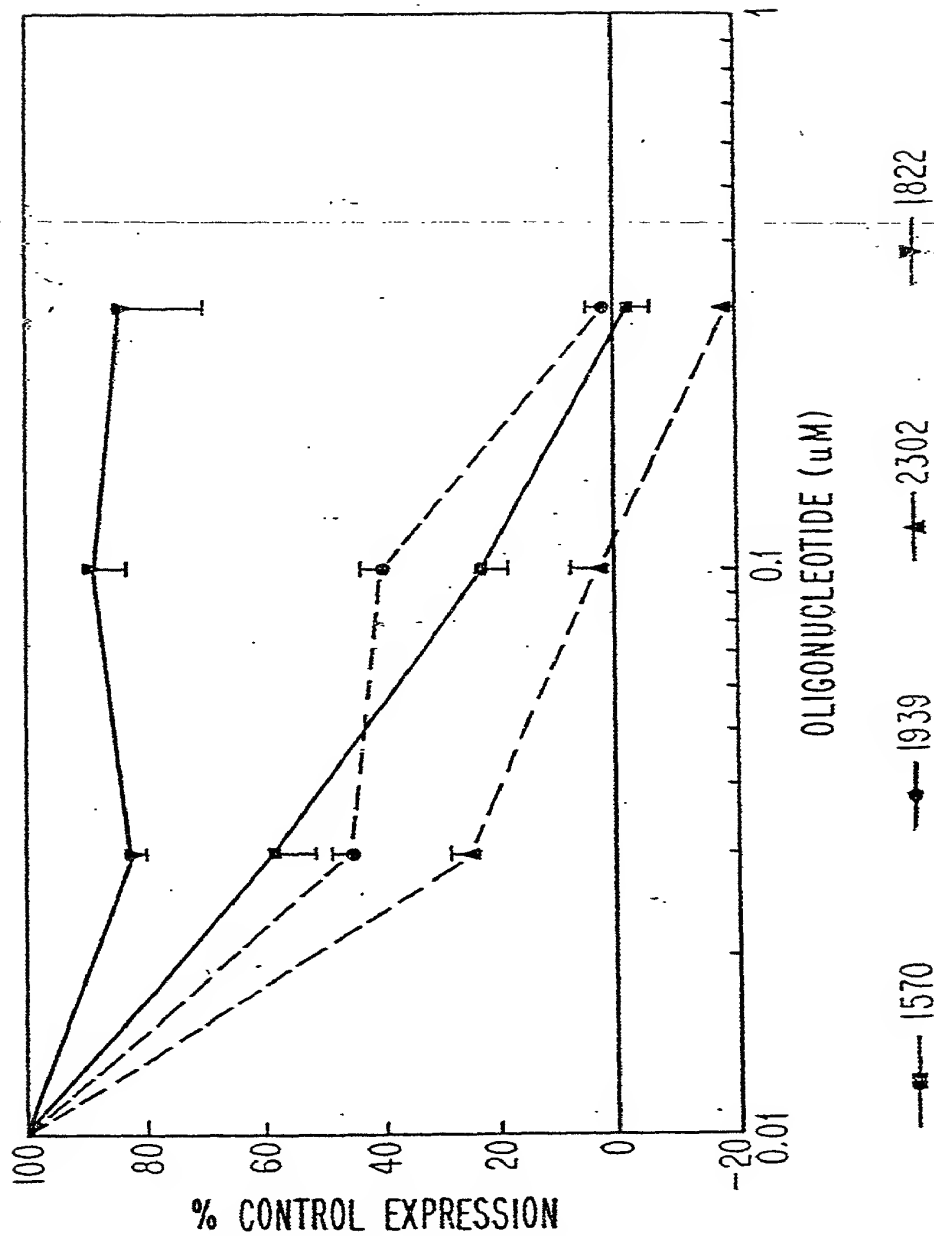


FIG. 15

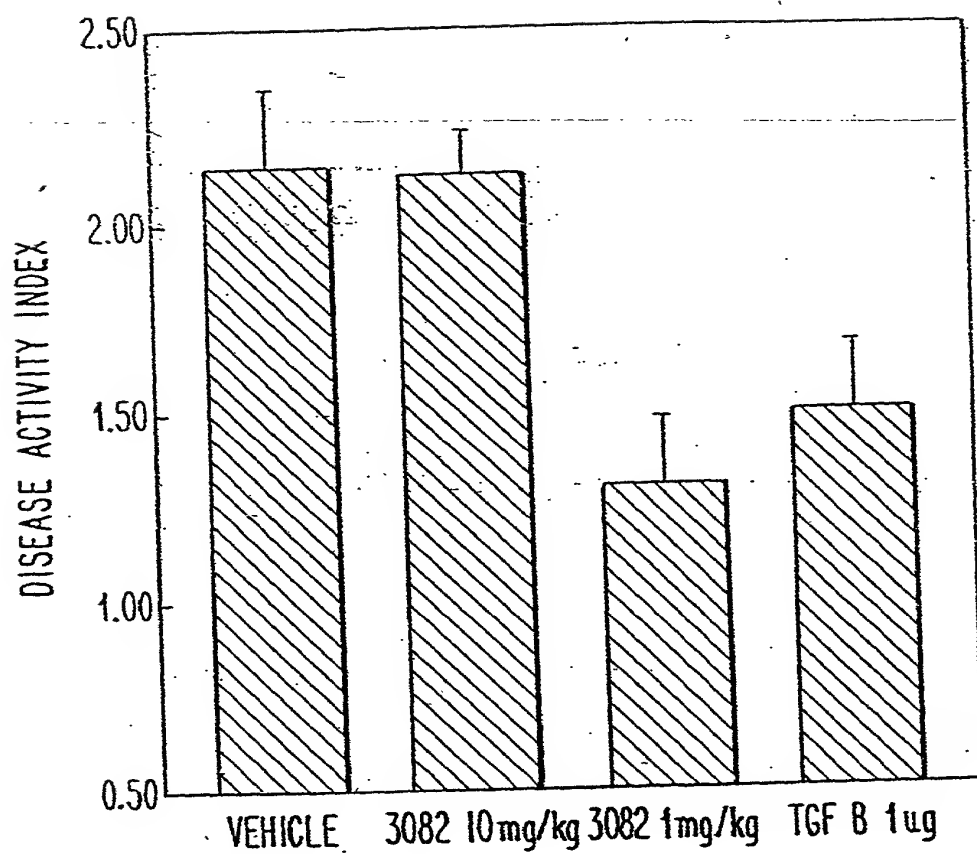


FIG. 16